

## **II. CLAIMS**

Claims 1 - 25. (Cancelled)

26. (Previously Presented) A dual-mode receiver operable to receive signals in a first mode having an associated first channel spacing, and to receive signals in a second mode having an associated second channel spacing smaller than the first channel spacing, comprising:

first and second front-end RF stages for receiving a signal transmitted in the first mode and the second mode, respectively, and supplying a further signal to RF circuitry operable at an intermediate frequency (IF) common to each mode of operation.

27. (Previously Presented) A receiver as claimed in claim 26, comprising two frequency down-conversion stages.

28. (Previously Presented) A receiver as claimed in claim 27, wherein a synthesizer associated with one frequency down-conversion stage has a frequency resolution equal to the channel spacing associated with the received signal.

29. (Previously Presented) A receiver as claimed in claim 28, wherein a synthesizer associated with another frequency down-conversion stage has a frequency resolution wider than the channel spacing associated with the received signal.

30. (Previously Presented) A receiver as claimed in claim 26, operable to convert signals received in the first mode and the second mode directly to a common intermediate frequency.

31. (Previously Presented) A receiver as claimed in claim 26, further comprising:

a first antenna for receiving a first signal in the first mode;

a filter associated with the first antenna for selecting signals lying in a predetermined first frequency band;

a first mixer for mixing the received first signal with a first local oscillator signal;

a second antenna for receiving a second signal in the second mode;

a filter associated with the second antenna for selecting signals lying in a predetermined second frequency band;

a second mixer for mixing the received second signal with a second local oscillator signal;

a switch for selecting between signals received in the first mode and the second mode having as an output, the output of the first mixer or the second mixer; and

a third mixer for mixing the output of the switch with a third local oscillator signal to produce a signal suitable for base band processing.

32. (Previously Presented) A receiver as claimed in claim 31, wherein the second local oscillator signal is produced by a first synthesizer.

33. (Previously Presented) A receiver as claimed in claim 31, wherein the third local oscillator signal is produced by a second synthesizer.

34. (Previously Presented) A receiver as claimed in claim 31, wherein the first local oscillator signal is produced by a combined output of the first and the second synthesizers.

35. (Previously Presented) A receiver as claimed in claim 26, operable to convert the frequency of a signal received in one of said modes to a frequency associated with the other of said modes.

36. (Previously Presented) A receiver as claimed in claim 26, further comprising:

a first antenna for receiving a first signal in the first mode;

a second antenna for receiving a second signal in the second mode;

a filter associated with the second antenna for selecting signals lying in a predetermined second frequency band;

a first mixer for mixing the received second signal with a first local oscillator signal;

a switch for selecting between signals received in the first mode and the second mode, and having as an output, the output of the first mixer or the output of the first antenna;

a filter for selecting signals from the output of the switch lying in a first predetermined frequency band;

a second mixer for mixing the filtered output of the switch with a second local oscillator signal; and

a third mixer for mixing the output of the second mixer with a third local oscillator signal to produce a signal suitable for base band processing.

37. (Previously Presented) A receiver as claimed in claim 36, wherein the first local oscillator signal is produced by a first synthesizer.

38. (Previously Presented) A receiver as claimed in claim 36, wherein the third local oscillator signal is produced by second synthesizer.

39. (Previously Presented) A receiver as claimed in claim 36, wherein the second local oscillator signal is produced by a combined output of the first and the second synthesizers.

40. (Previously Presented) A dual-mode transmitter operable to transmit signals in a first mode having an associated first channel spacing, and to transmit signals in a second mode having an associated second channel spacing smaller than the first channel spacing, comprising:

first and second terminal RF stages for transmitting a signal in the first and the second mode respectively, the terminal RF stages being supplied by a signal from RF circuitry operable at an intermediate frequency (IF) common to each mode of operation.

41. (Previously Presented) A transmitter as claimed in claim 40, further comprising two frequency up-conversion stages.

42. (Previously Presented) A transmitter as claimed in claim 41, wherein a synthesizer associated with one frequency up-conversion stage has a frequency resolution equal to the channel spacing associated with the transmitted signal.

43. (Previously Presented) A transmitter as claimed in claim 42, wherein a synthesizer associated with another frequency up-conversion stage has a frequency resolution wider than the channel spacing associated with the transmitted signal.

44. (Previously Presented) A transmitter as claimed in claim 40, further comprising:

a first mixer for mixing a modulated signal with a first local oscillator signal;

a switch for selecting between transmission in the first and the second modes and having the output of the first mixer as an input;

a second mixer for mixing the output of the switch with a second local oscillator signal when transmission in the first mode is selected;

a filter associated with the output of the second mixer for selecting signals lying in a predetermined first frequency band;

a first antenna for transmitting signals in the first mode;

a third mixer for mixing the output of the switch with a third local oscillator signal when transmission in the second mode is selected;

a filter associated with the output of the third mixer for selecting signals lying in a predetermined second frequency band; and

a second antenna for transmitting signals in the second mode.

45. (Previously Presented) A transmitter as claimed in claim 44, further comprising a first synthesizer, and wherein the first local oscillator signal is produced by the first synthesizer.

46. (Previously Presented) A transmitter as claimed in claim 44, further comprising a second synthesizer, and wherein the third local oscillator signal is produced by the second synthesizer.

47. (Previously Presented) A transmitter as claimed in claim 44, further comprising a first synthesizer and a second synthesizer, and wherein the second local oscillator signal is produced by a combined output of the first synthesizer and the second synthesizer.

48. (Previously Presented) A transmitter as claimed in claim 40, comprising:

a first mixer for mixing a modulated signal with a first local oscillator signal;

a second mixer for mixing the output from the first mixer with a second local oscillator signal;

a filter associated with the output of the second mixer for selecting signals lying in a predetermined first frequency band;

a switch for selecting between transmission in the first mode and the second mode and having the filtered output of the second mixer as an input;

a first antenna for transmitting signals in the first mode when transmission in the first mode is selected;

a third mixer for mixing the output of the switch with a third local oscillator signal when transmission in the second mode is selected;

a filter associated with the output of the third mixer for selecting signals lying in a predetermined second frequency band; and

a second antenna for transmitting signals in the second mode.

49. (Previously Presented) A transmitter as claimed in claim 48, further comprising a first synthesizer, and wherein the first local oscillator signal is produced by the first synthesizer.

50. (Previously Presented) A transmitter as claimed in claim 48, further comprising a second synthesizer, and wherein the third local oscillator signal is produced by the second synthesizer.

51. (Previously Presented) A receiver or transmitter as claimed in claim 26, operable with a terrestrial cellular communication system in the first mode.

52. (Previously Presented) A receiver or transmitter as claimed in claim 26, operable with a satellite communication system in the second mode.

53. (Previously Presented) A receiver or transmitter as claimed in claim 51, wherein the terrestrial cellular communication system is GSM.

54. (Previously Presented) A receiver or transmitter as claimed in claim 52, wherein the satellite system is IRIDIUM.

55. (Previously Presented) A receiver or transmitter as claimed in claim 52, wherein the satellite system is ICO.

56. (Previously Presented) A receiver or transmitter as claimed in claim 26, wherein the first channel spacing is 200 KHz.

57. (Previously Presented) A receiver or transmitter as claimed in claim 26, wherein the second channel spacing is 41.67 KHz or 25 KHz.

58. (Previously Presented) A transceiver comprising the receiver of claim 26, and a transmitter.

59. (Previously Presented) A transceiver as claimed in claim 58, further comprising a synthesizer operable for both transmitting and receiving.



60. (Previously Presented) A receiver as claimed in claim 26, further comprising filter circuitry communicating said signals between said RF stages and baseband equipment, said further circuitry being operable at intermediate frequency for rejecting interference from adjacent ones of channels communicating signals in said first mode and said second mode.

61. (Previously Presented) A transmitter as claimed in claim 40, further comprising filter circuitry communicating said signals between said RF stages and baseband equipment, said further circuitry being operable at intermediate frequency for rejecting interference from adjacent ones of channels communicating signals in said first mode and said second mode.